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Education

Ph.D. University of California, Santa Barbara, Physics, September 1998
B.A. Pomona College, Physics and Mathematics (summa cum laude), May 1992

Appointments

Principal Member of Technical Staff, Sandia National Laboratories, Oct. 2006 – present
Senior Member of Technical Staff, Sandia National Laboratories, May 2003 – Oct. 2006
Postdoctoral Appointee, Sandia National Laboratories, Oct. 2000 – May 2003
Postdoctoral Fellow, ExxonMobil Research and Engineering Co., Oct. 1998 – Oct. 2000
NSF Fellow, Graduate Student Researcher, Doctoral Scholar Fellow, and UC President's Dissertation
Year Fellow, Department of Physics, University of California, Santa Barbara, Sept. 1992-Sept. 1998

Recent Publications

1. L. M. Hall, M. J. Stevens, and A. L. Frischknecht, *Effect of polymer architecture and ionic aggregation on the scattering peak in model ionomers*, Phys. Rev. Lett., in press (2011).
2. V. Padmanabhan, A. L. Frischknecht, and M. E. Mackay, *Binary fluid with attractions near a planar wall*, Phys. Rev. E **82**, 021507 (2010).
3. A. L. Frischknecht, E. S. McGarry, and M. E. Mackay, *Expanded chain dimensions in polymer melts with nanoparticle fillers*, J. Chem. Phys. **132**, 204901 (2010).
4. T.C. Tseng, E. S. McGarry, J. W. Kiel, P. M. Duxbury, M. E. Mackay, A. L. Frischknecht, S. Asokan, and M. S. Wong, *Three-dimensional liquid surfaces through nanoparticle self-assembly*, Soft Matter **6**, 1533 (2010).
5. J. Z. Jin, J. Z. Wu, and A. L. Frischknecht, *Modeling microscopic morphology and mechanical properties of block copolymer/nanoparticle composites*, Macromolecules **42**, 7537 (2009).
6. E. S. McGarry, P. M. Duxbury, M. E. Mackay, and A. L. Frischknecht, *Calculation of entropic terms governing nanoparticle self-assembly in polymer films*, Macromolecules **41**, 5952 (2008).
7. E. S. McGarry, A. L. Frischknecht, and M. E. Mackay, *Phase behavior of polymer-nanoparticle blends near a substrate*, J. Chem. Phys. **128**, 154904 (2008)
8. A. L. Frischknecht, *Forces between nanorods with end-adsorbed chains in a homopolymer melt*, J. Chem. Phys. **128** 224902 (2008).
9. A. L. Frischknecht and M. G. Martin, *Simulation of the adsorption of nucleotide monophosphates on carbon nanotubes in aqueous solution*, J. Phys. Chem. C **112**, 6271-6278 (2008).
10. E. S. McGarry, A. L. Frischknecht, L. J. D. Frink, and M. E. Mackay, *Surface-induced first order transition in athermal polymer/nanoparticle blends*, Phys. Rev. Lett. **99**, 238302 (2007).
11. L.J.D. Frink and A.L. Frischknecht, *Computational investigations of pore forming peptide assemblies in lipid bilayers*, Phys. Rev. Lett. **97**, 208701 (2006).

Recent Invited Talks

- *Molecular Modeling of Nanoparticles in Lipid Bilayers*, INCBN IGERT Seminar, University of New Mexico, Albuquerque, New Mexico, November 15, 2010.
- *Engineering Nanoscale Assemblies in Soft Materials*, LASERION 2010, Schloss Ringberg, Tegernsee, Germany, July 10, 2010.
- *Molecular Modeling of Phase Behavior in Polymer Nanocomposites*, Gordon Research Conference on Polymer Physics, Mt. Holyoke College, Massachusetts, June 29, 2010.
- *Modeling Bulk and Interfacial Phase Behavior in Polymer Nanocomposites*, WE-Heraeus-Seminar on Polymer NanoParticles Interactions: Concepts, Observations, and Applications, Physikzentrum Bad Honnef, Germany, March 28-31, 2010.
- *Molecular Modeling of Phase Behavior in Polymer Nanocomposites*, Materials Research Outreach Program Symposium, University of California, Santa Barbara, February 3-5, 2010.
- *Molecular Theory Applied to Lipid Bilayers and Lipid-Protein Interactions*, Biomembrane Frontiers, Workshop at the University of California, Davis, California, March 20-21, 2008.

Honors

UC President's Dissertation Year Fellowship (1997-1998)

UCSB Doctoral Scholar Fellowship (1996-1997)

NSF Fellowship (1992-1995)

Professional Service

Reviewer for: DOE-BES, NSF, Phys. Rev. Lett., Phys. Rev. E, Macromolecules, J. Chem. Phys., Soft Matter

Co-chair, PMSE Symposium on "Polymer-Based Nanoparticles and Nanostructures," ACS Annual Meeting, Chicago, Illinois, March 25-30, 2007.

Nominating Committee, Division of Polymer Physics of the American Physical Society, March 2007-March 2008; March 2009-March 2010.

Collaborators (last 48 months):

Sandia National Labs: N.S. Bell, S.M. Brozik, J.G. Cordaro, E.H. Feng, M.A. Heroux,

D.H. Huber, J.W. Hsu, S.B. Rempe, P.A. Schultz, M.J. Stevens, F. B. van Swol

Outside Sandia: R. Composto (U Penn), P.M. Duxbury (Michigan State), G.H. Fredrickson (UC Santa Barbara), S. Hur (UCSB), L.J.D. Frink (Colder Insights, Inc.), E.S. McGarry (Michigan State and Delft University of Techn.), M. E. Mackay (Univ. of Delaware), V. Padmanabhan (Univ. of Delaware), S. Reed (Univ. of Colorado Denver), K.I. Winey (U Penn), J.Z. Wu (UC Riverside), A. Yethiraj (UW Madison)

Postdocs and Students Supervised:

Julianne Hefferman, undergrad, summer 2004

Dr. Erin S. McGarry, postdoc, Jan 2006-Jan 2009

Dr. Venkat Padmanabhan, postdoc, March 2009-March 2011

Dr. Lisa M. Hall, postdoc, Dec 2009-present

Advisors:

James S. Langer and Glenn H. Fredrickson, UC Santa Barbara (Ph.D. advisors); Scott T. Milner, Penn State (postdoc advisor); John G. Curro, University of New Mexico (postdoc advisor).